



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO. 09/12,291	FILING DATE 10/08/99	FIRST NAMED INVENTOR EITZMAN	ATTORNEY DOCKET NO. 52828USABA
------------------------------	-------------------------	---------------------------------	-----------------------------------

IM52/0808
OFFICE OF INTELLECTUAL PROPERTY COUNSEL
3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL MN 55133-3427

EXAMINER HUG, E

ART UNIT 1731	PAPER NUMBER 9
------------------	-------------------

DATE MAILED: 08/08/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/415,291

Applicant(s)

EITZMAN ET AL.

Examiner

Eric Hug

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This action is in response to the amendment filed on June 7, 2001.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rousseau (WO 97/07272). Rousseau discloses fibrous webs having electret properties generated by impinging the formed web with high pressure jets of water. The webs are formed from an admixture of nonconductive fibers plus a perfluorinated compound and/or a triazine compound, then charged via the high-pressure impingement of water, and dried. An annealing step prior to water impingement can be employed to bring the fluorinated moiety to the surface of the fibers.

The claimed method of the invention is wetting a web of nonconductive polymers with a wetting agent (i.e. surfactant), saturating the web with a polar agent (specifically water), and then drying the web. In Rousseau, the high pressure impingement of the web saturates the web. The reference states that it is desired to have a vacuum

Art Unit: 1731

underneath the web to aid in removal of excess water, thus the web is saturated.

Although Rousseau does not add a surfactant to the web prior to charging with water, it would be obvious to one skilled in the art to apply a surfactant to a hydrophobic polymer web (having no polar substituents) in order to attach a polar molecule. Rousseau does not necessarily need additional surfactant for charging the web because of the presence of the polar fluorinated moieties admixed with the fibers. Without the admixed fluorinated moieties, it would be imperative to add a surfactant. Many references in the art teach adding surfactants to electret materials prior to charging, for enhancing desired functions such as dust entrapment and water filtering. Fluorinated surfactants are often chosen, and some function in the same manner as the admixed compounds of Rousseau do. With respect to the other claims:

Claims 2, 3, 14: Rousseau uses purified water, directed onto and through the web.

Claim 4, 9, 10, 12: The fluoro compounds of Rousseau which are admixed with the fibers are known to be oily-mist performance enhancing additives.

Claims 5-8: The quality factors given by Rousseau exceed 0.9.

Claims 4, 11: The fibers used by Rousseau are microfibers.

Claims 13, 15, 16, 17, 19: Sonic vibration, pressure application, soaking, and "dipping and squeezing" (combination of pressure and soaking) are well known methods of wetting web materials.

Art Unit: 1731

Claim 18: It would be obvious to remove excess wetting liquid before saturating with water or other polar liquid to anchor the polar liquid firmly to the web and obtain the desired charge.

Claim 20-23: All are well known web drying techniques.

Claim 24: Suction is employed by Rousseau to remove excess water from the web.

Claims 25-26: Rousseau uses fibers of the claimed compositions.

Claims 27-35: These are all desired properties of electret filter media which are either expressly taught by Rousseau or are well known in the art.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Murayama et al (US 3,793,715). Murayama discloses a process for producing high quality electrets. The process comprises contacting an electret web of nonconductive fibers with water or steam to provide a stable charge.

Cohen et al (US 5,834,384) discloses using surfactants in the preparation of electret webs prior to corona charging.

Lifshutz (US 5,645,627) discloses charge stabilizing surfactants added to electret webs prior to charging.

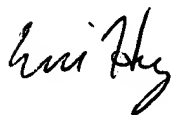
JP 63132625 discloses impregnating electret webs with anionic or non-ionic surfactants.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.



jeh
July 30, 2001



PETER CHIN
PRIMARY EXAMINER